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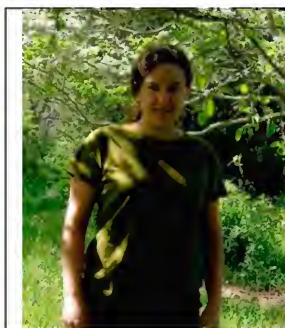
Dr. Richard Homola Memorial Foray a success! Educationally, Socially, Faculty-wise and Financially



Dr. Alan Bessette, Arleen Bessette, Gary Lincoff, Douglas Bassett, Ernst Both, Dr. Patrick Leacock, Renée LeBeuf, Dr. Frank Lotrich, Dr. Rosalind Lowen, Dale Luthringer, Donna Mitchell, Dr. Shannon Nix, John Plischke III, Bill Roody, Noah Siegel, Walt Sturgeon, Dr. Rod Tulloss, Kim Plischke, Becky Plischke, Ron Spinoso, Rebecca Miller, Mark Spear, Jim Tunney, Tina Ellor, Ursula Pohl
Foray article on page 3

New NAMA Executive Secretary Selected – Rebecca Rader

Rebecca Rader has been a NAMA member since 2004 and founded The New River Valley Mushroom Club in 2008. She has been an educator for the Science Museum of Western VA, an Interpretive Guide for the US Forest Service, a private art teacher, and has worked in the Montgomery County, MD Public Schools. She has been a professional artist for 15 years, doing pencil and watercolor portraits, illustrations, and craft work.



The new version of the NAMA Directory is now available to members. To get your copy, send an email to Ann Bornstein
annstitcher@charter.net

Want to read more about mycological matters?
In addition to NAMA and your local affiliate club, subscribe to:
Fungi magazine www.fungimag.com
Mushroom: The Journal of Wild Mushrooming
leon@mushroomthejournal.com

Ron Spinoso NAMA's 2011

Harry and Elsie Knighton
Service Award recipient



More on Ron and the Minnesota
Mycological Society page 5

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President's Message

I want to commend the Plischke family, John, Becky, John III and Kim, and the Western Pennsylvania Mushroom Club for organizing and managing the 2011 Annual NAMA Foray. Overseeing such a large event is very demanding and these principals handled it with great skill and foresight; the outcome was a wonderful Foray that featured a record number of knowledgeable presenters speaking on an extraordinary range of fungi subjects. This was in addition to the many interesting and productive foraging walks conducted around the city of Clarion. The total number of species found came to over 300.

Several administrative changes were approved at the Trustees Meeting. Rebecca Rader is now the new Executive Secretary, replacing Bruce Eberle. Herbert Pohl will be replacing Judith McCandless as Treasurer beginning January 1, 2012, and Angelica Miller will be replacing Herbert as the Chair of the Finance Committee. Regional Trustees elected included: for Region I, Noah Siegel; for Region II, Ursula Pohl; for Region IV, Judith McCandless; and finally, for Region IX, Patrice Benson. Congratulations to all the newly elected and appointed officers and special thanks to Judith McCandless and Bruce Eberle for their outstanding service to NAMA.

There were several service awards granted as well. Among them, Jay Justice received the "Award for Contributions to Amateur Mycology." This award is given annually in recognition of those who have contributed extraordinarily to the advancement of amateur mycology. Next, Ron Spinosa was the winner of the "Harry and Elsie Knighton Service Award." This award is given for distinguished service to the recipient's local club. Then there were two President's Awards conferred in recognition of outstanding service: Dr. Patrick Leacock received this award for his many years of excellent work on the NAMA Voucher Program. It represents the finest collection of its kind in North America. Likewise, Ike Forester was duly awarded for his exceptional service as NAMA Treasurer and later as NAMA President. Congratulations to Jay, Ron, Pat and Ike for their awards and for their terrific dedication to NAMA and the field of mycology. In addition to the service awards, several awards were presented by the [continued page 3]

Moving?

Please send your new address **two weeks** before you move to:

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To receive *The Mycophile* electronically send your email address to Ann.

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Send contributions to:
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Rebecca Rader.
Executive Secretary
PO Box 64
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President's Message Continued

Photography Committee to our skilled photographers for their excellent work in several categories.

At the Foray I had an opportunity to speak with Joe Brandt about the availability of liability insurance to member clubs. Joe has devoted a good deal of time researching the offerings of several insurance carriers and has offered to share the information and materials he has gathered with interested members. If you wish to contact him regarding this subject, he can be reached at jlbc@hotmai.com.

Looking ahead, here in Minnesota we had very good fortune finding a variety of summer mushrooms, particularly Chanterelles; and although we have more recently experienced drought like conditions in some nearby areas, we have nevertheless been able to enjoy several rewarding mushroom gathering forays. I hope you too are having or had good luck on your forays and look forward to hearing from you about your successes. **Bob Fulgency**

The 2011 NAMA DR. RICHARD HOMOLA MEMORIAL FORAY AT CLARION, PENNSYLVANIA, AUGUST 4 - 7

This year the foray was packed full of 30 lectures and workshops for the approximately 250 attendees to choose from. The pre-foray Ascomycetes Workshop was conducted by Roz Lowen. Although I did not attend the workshop, one interesting mushrooms was brought in by Debbie Viess. She identified her collection of *Cheilymenia raripila* that was growing on bear dung [collected in Calif. -editor]. It's a little orange colored cup fungi with very fine hairs that go around the outer margin of the cup.

The foray started off with 3 early bird mushroom hunts. On the foray that I led to Beaver Meadow, Allegheny National Forest, one of the most interesting mushrooms was *Psilocybe caerulipes* that was found by Ron Pastorino growing on fallen wood (see photo below). I have not seen that mushroom for about 10 years.

On Friday, the 2nd day of the foray there were always 2 lectures or workshops running simultaneously and there were 4 buses going to the foray sites. There was so much going on at the same time, a lot of planning and difficult choices had to be made. I am glad I had a schedule before the foray. I took one of the buses going to Cook Forest State Park and hiked along Tom's Run. I choose Cook Forest because of the old growth forests. Many of the trees there are 300 plus years old and were a real pleasure to see. Luckily I spotted Benjamin Burghardt shortly after we got into the woods; he was digging out several *Elaphocordyceps ophioglossoides* (The Gold Thread Cordyceps) that were attached to underground false truffles called Elaphomyces. We saw at least 50 of them there.

One of new things that was tried with great success at the foray was having many of the buses split into two different walks. Half of the bus would go to one spot at a park and the other half of the bus went to a different nearby spot at that park. It made the walks less crowded and produced greater fungi diversity on the collection tables and less duplicates.

Some of my favorite mushrooms that were on display at the foray:



Boletus roodyi to read about it see

<http://www.sciencebuff.org/content/files/science-pdf/Both/Orizt-Santanaetal2009newboletus.pdf>



Leccinum subgranulosum see page 210 at

<http://quod.lib.umich.edu/f/fung1tc/AGK0838.0001.001?view=toc>

Even though the collection started off slow because of the hot conditions we ended up with approx. 324 species.

It's sort of funny that I am writing about the foray; I did spend a lot of time there from Monday to Sunday but the funny part is that I did not get to attend any of the lectures or workshops and only got to go on the two walks that I led. I would have really liked to have seen and reported on some of them. I did hear lots of great comments on the 30 presentations/workshops. I think it was a record. Most of the people that know me at a foray, know that I spend all my time at the ID tables and taking photographs. This year I just took the 5 pictures here and only got to ID a mushroom or two. I spent my time carrying people's bags to their rooms, getting people new keys when keys did not work, and just generally serving those at the foray.

I am happy to report for the first time ever, I got away from the ID tables and photographing the mushrooms to attend the evening lectures, although I did not get to hear much of them. I was running back and forth setting things up, making announcements, keeping the evening programs on schedule, trying to solve problems and most importantly making sure that the vast unending quantities of wine, beer, and snacks were ready for the evening socials by the end of the programs.

Perhaps the funniest problem that happened at the foray was after the evening social when only a handful of us were in the ID room, everyone else was back in bed. A number of armed police approached with serious concerns and questions about a mysterious bottle of liquor that they found that had strange mushrooms in it. Luckily they were not magic mushrooms and after a little explaining all was well.

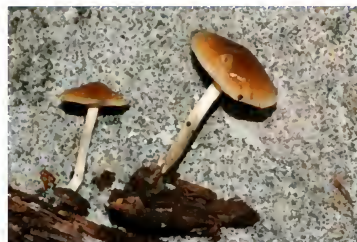
I would like to thank all the presenters and the hundreds of other people who helped with the foray to make it a success. Over the year we have benefited from attending forays and pleased that we were able to give back by hosting the 2011 NAMA Foray.

John Plischke III [Editor's note: John was personally asked to prepare this summary of the events. It was doubly difficult, both because he was so involved behind the scenes and because it is awkward giving family and Club members the credit they deserve for a job so well done. Thanks John!]

Socializing, Mycophagizing and Bidding



Amanita whetstoneae nom. prov. to read about it see <http://www.amanitaceae.org/?Amanita+whetstoneae>



Psilocybe caeruleipes note the blue mycelium and staining



Wynnea americana note the sclerotia which was dug out on a moth



Photos by John Plischke III

NAMA AWARDS PRESENTED AT THE 2011 FORAY

Award for Contributions to Amateur Mycology

The 2011 NAMA Award for Contributions to Amateur Mycology was presented to **Jay Justice**. Jay has devoted himself to enriching mycological understanding, both as a taxonomist and administrator. As president and prime mover of the Arkansas Mycological Society, he has instigated many fungal activities in his region. He has worked tirelessly to support mycological societies throughout the country and willingly serves as a taxonomist at numerous club forays. He often leads workshops and gives presentations for local clubs. Among his special interests are the genera of southern *Boletus* and *Amanita* and his grasp of these groups has contributed to a better understanding of their fruitings and geographical areas.

As a mycological booster, Jay has served as both a club trustee to NAMA and a Regional Trustee for NAMA. He has also generously supported NAMA in many capacities, including those of being a member of the Toxicology Committee, Editor of *The Mycophile*, Chairman of the Foray Committee and Vice President.

Jay's enthusiasm for all things fungal and his graciousness in sharing his knowledge with any interested person makes him an ideal recipient for this award.



The Harry and Elsie Knighton Service Award

The 2011 NAMA Harry and Elsie Knighton Service Award was presented to **Ron Spinoso** of the Minnesota Mycological Society [MMS]. Ron's passion for mycology is evidenced by his continued service to the MMS, NAMA, local schools and nature centers as well as the medical community in Minnesota.

Ron has been an active member for more than 20 years and a board member for the past 12 years, serving as president for four terms. Ron has been the Editor of the MMS newsletter, "*The Toadstool Review*", since 2006 and has written many original articles. He serves as the club's primary mushroom identification expert on forays, at club meetings and when the general public submits questions. He has earned the President's Award, Golden Chanterelle Award and the MMS Lifetime Achievement Award.

Ron has taken an active role in mushroom cultivation for NAMA since 2005. He has given presentations on cultivation at three NAMA forays and helped schedule speakers at two additional NAMA forays. He also founded the NAMA Mushroom Cultivation Group on Yahoo Tech Groups.

Ron provides leadership to the MMS educational outreach program by serving on the State Fair Committee each year and by giving talks and providing expert advice at schools, nature centers, plant shows, museums and even commercial garden centers. In addition, Ron helped create the traveling exhibit display and maintains a large specimen collection for use with the exhibit.



Finally, Ron serves a critical role in the community by being available to identify mushrooms for the Regional Poison Control Center. It is because of his dedication to so many areas of mycology education that Ron is an excellent recipient of the prestigious Harry and Elsie Knighton Service Award.



The Minnesota Mycological Society [MMS], Ron's home club, is the second oldest organization of its kind in the United States. Originally organized in the 1890s, the Minnesota Mycological Society was officially incorporated in 1899.

The original purpose of the group was, *"...scientific study and experimentation on fungi as a food product, gathering and dissemination of knowledge on that subject and the perpetuation of same by publication of facts obtained..."*

While the group is still very committed to the identification and dissemination of knowledge about mushrooms, it has also become a social activity for members and their families. Today, it is just as important for the society's members to enjoy an outing in the woods, as it is to identify various fungi. The

Minnesota Mycological Society is putting the "Fun" back in Fungi.

The MMS currently has 450 members. In addition to monthly meetings, the MMS holds four additional meetings during the mushroom season for a total of 16. These provide information on fungi that are available in the area, and help identify mushrooms brought in by members and visitors. New members are given a 15 page introduction to mushrooming and to the Club. The MMS publishes a newsletter, *The Toadstool Review*, four times a year, and annually hold raffles and an auction, a photo contest, an awards banquet, a potluck dinner, and exhibit at the State Fair. The MMS performed a "hat trick" at the State Fair by winning the "Grand Prize Ribbon" three times in a row! Oh, and the MMS also sponsors regular forays to help both novice and experienced members learn how to collect and identify mushrooms in their natural habitat. This includes some forays requiring cross country skis! The MMS is an affiliate club of the NAMA. Their website is www.Minnesotamushrooms.org.

Prepared with the aid of Barry Beck, President, Minnesota Mycological Society and the Board of the MMS

President's Outstanding Service Award

This year the President's Outstanding Service Award was given to two NAMA members:
Dr. Patrick Leacock and Ike Forester.

The award was presented to **Dr. Patrick Leacock** in recognition of his many years of dedicated and outstanding service to NAMA. Beginning in 1988 he served as Recorder for many years and, in 1997 assisted in instituting the NAMA Voucher Collection Program, serving as Chair of the Voucher Committee, Coordinator of the Program, and liaison with the Field Museum since 1998. Dr. Leacock has directed the identification, photography, preservation, and accessioning of hundreds of NAMA voucher specimens. Through Dr. Leacock's exceptional efforts and leadership, NAMA has built and maintains one of the finest collections of fungi in North America.



The award was announced to **Ike Forester** in recognition of his outstanding and dedicated service to NAMA. Ike held the position of Treasurer for several years followed by two terms as President, both important and demanding positions that he handled with distinction and foresight. As President he successfully guided this organization with skill through unexpected and challenging circumstances. In addition, he has generously given to NAMA the benefit of his professional expertise and advice. And most importantly, he was able to maintain NAMA's tradition of excellence and to pass on to the new management team an organization in shipshape.



Forays, Fairs and Announcements

The 2012 NAMA Annual Foray December 13-16

Since California has an active mycology scene, and since there has not been a NAMA foray there since the 1998 Asilomar Foray, the Fungus Federation of Santa Cruz has offered to be our host club with Noah Siegel as the Foray chair. The Foray will be held at the Mission Springs Camp and Conference Center in Scotts Valley, CA. It's located about six miles north of Santa Cruz, CA, 21 miles from the San Jose Airport or 62 miles from the San Francisco Airport.

The Center is surrounded by great mushroom hunting areas and lots of public land as well as private land which have granted us collection permits. The Center will accommodate about 300 with a range of room rates.

NAMA Regional Forays

The 14th Wildacres Retreat was a success according to participants.

While awaiting details and pictures consider travelling to North Carolina next Fall.



Forays of interest to NAMA Members

All California Foray

January 27-29, 2012 Albion, California the 5th California Club Foray. The Albion Field Station is located near Mendocino, registration is \$175. Dr. Else Vellinga is Chief Mycologist. See www.namyco.org for more information.

Humbolt Bay Mycological Society Mushroom Fair

The Humbolt Bay Mycological Society will be hosting a mushroom fair Sunday, November 20, 2011. The event will be held at Redwood Acres Fairgrounds in Eureka, CA from 11 am to 4 pm. Admission for adults is \$2 and children are \$1. There will be cooking demonstrations, displays and, of course, mushrooms will be identified and questions answered!

Mt. Pisgah Mushroom Festival

The Cascade Mycological Society recently reported in its newsletter "Among Fungi" the 30th anniversary of the Mushroom Festival on Sunday, October 30. In addition to the many events and happenings during the one day show, a guest mycologist, our own book reviewer Dr. Steve Trudell, will give a public presentation the previous Friday, and CMS members will conduct collecting forays before the main event. The Festival kicks off Mushroom Madness Week during which eight eating establishments will be preparing special wild mushroom dishes and in one case, Porcini Scotch Ale. What a great way to capture public interest and involvement.

NEMF 2012

East Stroudsburg University, PA August 2-5, 2012

**Preliminary list of
Annual NAMA Foray
2011 submitted by
NAMA Voucher
Committee**

Dr. Patrick Leacock,
Chair

<i>Agaricus cf. abruptibulbus</i>	<i>Boletus vermiculosus</i>	<i>Delicatula integrella</i>	<i>aurantiacum</i>	<i>Phaeolus schweinitzii</i>	<i>Sparassis spathulata</i>
<i>Agaricus campestris</i>	<i>Bovista pila</i>	<i>Elaphocordyceps</i>	<i>Leccinum holopus</i> var.	<i>Phellinus gilvus</i>	<i>Steccherinum</i>
<i>Agaricus sp. "k"</i>	<i>Callistosporium</i>	<i>ophioglassoides</i>	<i>holopus</i>	<i>Phellinus hartigii</i>	<i>ochraceum</i>
<i>Amanita abrupta</i>	<i>luteoalivaceum</i>	<i>Entoloma elodes</i>	<i>Leccinum luteum</i>	<i>Phlebia incarnata</i>	<i>Stemonitis axifera</i>
<i>Amanita atkinsoniana</i>	<i>Calocera cornea</i>	<i>Entoloma flavifolium</i>	<i>Leccinum scabrum</i>	<i>Pholiota granulosa</i>	<i>Stemonitis lignicola</i>
<i>Amanita bisporigera</i>	<i>Calocera viscosa</i>	<i>Entoloma strictius</i>	<i>Leccinum snellii</i>	<i>Phylloporus</i>	<i>Stereum complicatum</i>
<i>Amanita borealisorora</i>	<i>Calvatia cyathiformis</i>	<i>Entoloma aff. strictius</i>	<i>Leccinum</i>	<i>leucomyelinus</i>	<i>Stereum ostrea</i>
<i>nom. prov.</i>	<i>Camarops petersii</i>	<i>Flavoparmelia caperata</i>	<i>subgranulosum</i>	<i>Physarum stellatum</i>	<i>Stereum striatum</i>
<i>Amanita cinereaconia</i>	<i>Cantharellus</i>	<i>Fomes fomentarius</i>	<i>Lentinellus ursinus</i>	<i>Physarum viride</i>	<i>Stereum cf. striatum</i>
<i>Amanita</i>	<i>appalachiensis</i>	<i>Fomitopsis pinicola</i>	<i>Lentinus levis</i>	<i>Pisolithus arhizus</i>	<i>Strobilomyces cf.</i>
<i>cinereopannosa</i>	<i>Cantharellus cibarius</i>	<i>Fomitopsis spraguei</i>	<i>Lenzites betulina</i>	<i>Pleurotus dryinus</i>	<i>floccopus</i>
<i>Amanita daucipes</i>	<i>Am. auth</i>	<i>Fuligo septica</i>	<i>Leocarpus fragilis</i>	<i>Pleurotus pulmonarius</i>	<i>Suillus granulatus</i>
<i>Amanita farinosa</i>	<i>Cantharellus lateritius</i>	<i>Galiella rufa</i>	<i>Lepiota cristata</i>	<i>Pluteus cf. cervinus</i>	<i>Suillus grevillei</i>
<i>Amanita flavoconia</i>	<i>Cantharellus persicinus</i>	<i>Ganoderma</i>	<i>Leucoagaricus</i>	<i>Pluteus longistriatus</i>	<i>Suillus placidus</i>
<i>Amanita rhopalopus</i>	<i>Cantharellus sp.</i>	<i>applanatum</i>	<i>americanus</i>	<i>Pluteus pellitus</i>	<i>Suillus sp.</i>
<i>Amanita rubescens</i> US	<i>Cantharellus</i>	<i>Ganoderma lucidum</i>	<i>Lycogala epidendrum</i>	<i>Pluteus salicinus</i>	<i>Syzygospora</i>
<i>auth.</i>	<i>tubaeformis</i>	<i>Ganoderma tsugae</i>	<i>Lycoperdon coloratum</i>	<i>Polyporus alveolaris</i>	<i>mycetophila</i>
<i>Amanita rubescens</i> var.	<i>Ceratiomyxa fruticulosa</i>	<i>Gastrum quadrifidum</i>	<i>Lycoperdon</i>	<i>Polyporus craterellus</i>	<i>Tatraea macrospora</i>
<i>alba</i>	<i>Ceriporia tarda</i>	<i>Gerronema strombodes</i>	<i>marginatum</i>	<i>Polyporus</i>	<i>Tetrapyrgos nigripes</i>
<i>Amanita sp. N51</i>	<i>Cerrena unicolor</i>	<i>Gymnopilus penetrans</i>	<i>Lycoperdon perlatum</i>	<i>leptocephalus</i>	<i>Thelephora sp.</i>
<i>Amanita subcokeri</i>	<i>Chalciporus</i>	<i>Gymnopilus biformis</i>	<i>Lycoperdon pyriforme</i>	<i>Psathyrella candolleana</i>	<i>Thelephora vialis</i>
<i>nom. prov.</i>	<i>piperatoides</i>	<i>Gymnopilus confluens</i>	<i>Lycoperdon</i>	<i>Pseudevernia</i>	<i>Trametes elegans</i>
<i>Amanita cf.</i>	<i>Cheimonophyllum</i>	<i>Gymnopilus dichrous</i>	<i>subincarnatum</i>	<i>cansocians</i>	<i>Trametes versicolor</i>
<i>whetstoneae</i> nom.	<i>candidissimum</i>	<i>Gymnopilus dryophilus</i>	<i>Macrolepiota procera</i>	<i>Pseudofistulina</i>	<i>Tremelodendron</i>
<i>prov.</i>	<i>Chlorociboria</i>	<i>Gymnopilus luxurians</i>	<i>Marasmiellus opacus</i>	<i>radicata</i>	<i>pallidum</i>
<i>Amanita xanthomitra</i>	<i>aeruginascens</i>	<i>Gymnopilus semihirtipes</i>	<i>Marasmiellus praecutis</i>	<i>Pseudohydnum</i>	<i>Trichaptum abietinum</i>
<i>nom. prov.</i>	<i>Chromelosporium</i>	<i>Gymnopilus subnudus</i>	<i>Marasmius</i>	<i>gelatinosum</i>	<i>Trichaptum bifforme</i>
<i>Apiosporina morbosa</i>	<i>caerulescens</i>	<i>Gyrodont merulioideus</i>	<i>androsaceus</i>	<i>Psilocybe caerulipes</i>	<i>Tricholomopsis decora</i>
<i>Arcyria cinerea</i>	<i>Cladonia chlorophaea</i>	<i>Gyroporus castaneus</i>	<i>Marasmius capillaris</i>	<i>Punctelia rudecta</i>	<i>Tricholomopsis rutilans</i>
<i>Arcyria denudata</i>	<i>complex</i>	<i>Hapalopilus nidulans</i>	<i>Marasmius graminum</i>	<i>Punctelia subrudecta</i>	<i>Tubaria sp.</i>
<i>Artomyces piperatus</i>	<i>Cladonia cristatella</i>	<i>Helvella elastica</i>	<i>Marasmius oreades</i>	<i>Pycnoporellus</i>	<i>Tylopilus alboater</i>
<i>Bisporella citrina</i>	<i>Cladonia furcata</i>	<i>Hohenbuehelia</i>	<i>Marasmius pulcherripes</i>	<i>alboluteus</i>	<i>Tylopilus atronoticianus</i>
<i>Boletellus</i>	<i>Cladonia macilenta</i>	<i>petaloides</i>	<i>Marasmius rotula</i>	<i>Pycnoporellus fulgens</i>	<i>Tylopilus chromapes</i>
<i>chrysenteroides</i>	<i>Climacacystis borealis</i>	<i>Hydnoclaete olivacea</i>	<i>Marasmius scarodonius</i>	<i>Pycnoporus</i>	<i>Tylopilus ferrugineus</i>
<i>Boletellus intermedius</i>	<i>Climacodon</i>	<i>Hygrophoropsis</i>	<i>Marasmius siccus</i>	<i>cinnabarinus</i>	<i>Tylopilus</i>
<i>Boletus bicolor</i>	<i>septentrionalis</i>	<i>aurantiaca</i>	<i>Marasmius sullivantii</i>	<i>Ramaria stricta</i>	<i>plumbeoviolaceus</i>
<i>Boletus campestris</i>	<i>Clitocybe gibba</i>	<i>Hymenochaete</i>	<i>Megacollybia rodmani</i>	<i>Retiboletus griseus</i>	<i>Tylopilus</i>
<i>Boletus chrysenteron</i>	<i>Clitocybe odora</i>	<i>rubiginosa</i>	<i>Megacollybia rodmani</i>	<i>Retiboletus ornatipes</i>	<i>rubrobrunneus</i>
<i>Boletus edulis</i>	<i>Clitopilus prunulus</i>	<i>Hypocrea</i>	<i>aborted</i>	<i>Rickenella fibula</i>	<i>Tylopilus variobrunneus</i>
<i>Boletus firmus</i>	<i>Collybia tuberosa</i>	<i>chromosperma</i>	<i>Melanoleuca</i>	<i>Russula</i>	<i>Tyramyces chioneus</i>
<i>Boletus innixus</i>	<i>Conocybe apala</i>	<i>Hypocrea pallida</i>	<i>albaflavida</i>	<i>Russula betularum</i>	<i>Umbilicaria</i>
<i>Boletus longicurvipes</i>	<i>Coprinellus cf. sp.</i>	<i>Hypocrea</i>	<i>Melanoleuca verrucipes</i>	<i>Russula cadaveriolens</i>	<i>mammulata</i>
<i>Boletus nobilis</i>	<i>Cordyceps militaris</i>	<i>Hypogymnia physodes</i>	<i>Melanophyllum</i>	<i>nom. prov.</i>	<i>Usnea cf. hirta</i>
<i>Boletus oliveisporus</i>	<i>Cortinarius iodes</i>	<i>Hypomyces</i>	<i>haematospermum</i>	<i>Russula fragrantissima</i>	<i>Usnocetraria oakesiana</i>
<i>Boletus pallidus</i>	<i>Cortinarius vibratilis</i>	<i>cervinigenus</i>	<i>Meripilus sumstinei</i>	<i>group</i>	<i>Vararia cf.</i>
<i>Boletus pinophilus</i>	<i>Crepidotus applanatus</i>	<i>Hypomyces hyalinus</i>	<i>Micromphale foetidum</i>	<i>Russula mariae</i>	<i>Wynnea americana</i>
<i>Boletus pseudosensibilis</i>	<i>Crepidotus crocophyllus</i>	<i>Hypomyces cf.</i>	<i>Mycena leaiana</i>	<i>Russula michiganensis</i>	<i>Xanthoconium affine</i>
<i>Boletus roodyi</i>	<i>Crepidotus malachius</i>	<i>microspermus</i>	<i>Mycena sanguinolenta</i>	<i>Russula modesta</i>	<i>var. affine</i>
<i>Boletus roseipes</i>	<i>var. malachius</i>	<i>Hypoxylon fragiforme</i>	<i>Mycorrhaphium</i>	<i>Russula ochroleuroides</i>	<i>Xanthoconium affine</i>
<i>Boletus sensibilib</i>	<i>Crepidotus sp.</i>	<i>Inonotus obliquus</i>	<i>adustum</i>	<i>Russula aperta</i>	<i>var. maculosus</i>
<i>Boletus speciosus</i> var.	<i>Crucibulum laeve</i>	<i>Irpex lacteus</i>	<i>Omphalotus illudens</i>	<i>Russula peckii</i>	<i>Xanthoconium</i>
<i>brunneus</i>	<i>Cyathus olla</i>	<i>Kretzschmaria deusta</i>	<i>Oxyporus populinus</i>	<i>Russula pectinatoides</i>	<i>purpureum</i>
<i>Boletus subglabripes</i>	<i>Cyathus stercoreus</i>	<i>Laccaria cf. longipes</i>	<i>Paecilomyces farinosus</i>	<i>Russula redolens</i>	<i>Xanthoconium</i>
<i>Boletus subgraveolens</i>	<i>Cyathus stritatus</i>	<i>Laccaria</i>	<i>Panaeolina foenicisii</i>	<i>Russula rubescens</i>	<i>separans</i>
<i>Boletus subvelutipes</i>	<i>Cyptotrama asprata</i>	<i>lacrymabunda</i>	<i>Panellus stipticus</i>	<i>Russula subtilis</i>	<i>Xeromphalina</i>
<i>Boletus vermiculosoides</i>	<i>Cystolepiota sistrata</i>	<i>Lactarius camphoratus</i>	<i>Parasola plicatilis</i>	<i>Russula variata</i>	<i>campanella</i>
	<i>Cystolepiota sp.</i>	<i>Lactarius griseus</i>	<i>Parasola sp.</i>	<i>Russula cf. virescens</i>	<i>Xerula furfuracea</i>
	<i>Dacrymyces</i>	<i>Lactarius</i>	<i>Parmelia sulcata</i>	<i>Schizophyllum</i>	<i>Xerula</i>
	<i>chrysospermus</i>	<i>hygrophoroides</i>	<i>Paxillus</i>	<i>commune</i>	<i>rubrobrunneus</i>
	<i>Dacrymyces palmatus</i>	<i>Lactarius lignyotus</i>	<i>atrotomentosus</i>	<i>Scleroderma cepa</i>	<i>Xylaria polymorpha</i>
	<i>Dacryopinax cf. elegans</i>	<i>Lactarius maculatipes</i>	<i>Peltigera canina</i>	<i>Scleroderma citrinum</i>	<i>Xylobolus frustulatus</i>
	<i>Dacryopinax</i>	<i>Lactarius mutabilis</i>	<i>Perenniporia cf.</i>	<i>Sebacina incrustans</i>	
	<i>SPATHULARIA</i>	<i>Laetiporus cincinnatus</i>	<i>robiniofila</i>	<i>group</i>	
	<i>Daedalea quercina</i>	<i>Laetiporus sulphureus</i>	<i>Perenniporia subacida</i>	<i>Simocybe centunculus</i>	
	<i>Daedaleopsis</i>	<i>Lasallia papulosa</i>	<i>Phaeocalicium</i>	<i>Simocybe serrulatus</i>	
	<i>Boletus vermiculosoides</i>	<i>Leccinum cf.</i>	<i>polyporaenum</i>	<i>Sparassis cf. herbstii</i>	

Club Fairs

Thanks to the diligent work of members of the Education Committee under the able leadership of Sandy Sheine, Clubs have excellent information on the web for organizing and conducting Fairs for the public.

THE GREAT MMS 2011 MINNESOTA STATE FAIR EXHIBIT

The MMS State Fair exhibit was a great hit with the fair goers this year and once again received an excellent rating for its educational content. The MMS team working on the exhibit was very proud of the result and felt it their best exhibit yet. It had an expanded and improved Kids Section which included a fairy house where the children could get mushroom hats, badges marked "Learning Mycologist", play a mushroom themed game (developed by Betty Jo) and visit a small cave to look at spores through microscopes. Children were told to always have an expert along when gathering wild mushrooms.

A larger variety and number of cultivated mushrooms were available for the fair visitors to enjoy. In fact this section drew the most interest and questions. A Taylor Lockwood video was running on the TV at all times and there were at least two MMS members manning the exhibit to answer visitor's questions about mushrooms and our club. Most were amazed to discover the huge number of fungus species, 70 to 80 thousand described and probably a million and a half un-described. The center section of the exhibit was devoted to the Morel, Minnesota's State Mushroom; the center piece was a very large Dryad's Saddle Polypore (*Polyporus squamosus*) which drew a wow from the gathering crowd. Poisonous species were displayed under glass in a locked case. NAMA information and promotional materials were on display, including photographs and newspaper accounts of many of its recent annual forays. On the first day of the exhibit, John Lamprecht gave an introductory lecture to an attentive and sizable audience of young and old.

This year as a direct result of the exhibit a substantial number of visitors joined our club right on the spot. I know all MMS members join me in offering our congratulations and heartfelt thanks to our hardworking and devoted members who spent untold hours and creative effort to construct the extraordinarily successful and outstanding Annual State Fair Exhibit. This display is the face of MMS to the public and it is a delightfully positive one. **Bob Fulgency**

Reprinted from the Official Newsletter of the MMS, *The Toadstool Review*, Vol 40 #4, September 2011



MYCOLOGICAL ASSOCIATION of WASHINGTON D.C.'s [MAW] 10th ANNIVERSARY MUSHROOM FAIR AT BROOKSIDE GARDENS, WHEATON PARK, MARYLAND

With all the rain in the DC area bringing out an abundance of fungi which in turn brought out 585 attendees to the mushroom fair co-chaired by Danny Barizio (MAW culinary chair) and Connie Durnan (MAW membership chair).

The information desk, manned by Karen Adams and Jim Sherry, handed out leaflets about the fair and talked about membership in MAW. They registered 28 new members!

Ray LaSala (MAW President) and John Harper (MAW Treasurer) demonstrated ways to cook and preserve mushrooms.

Three speakers, Jon Ellifritz, Drew Minnis and William Needham, talked about mushroom identification. Two forays of the Gardens were led by Mitch Fournet (MAW foray chair) and Bruce Boyer (NAMA rep). Rene Piard helped Mitch, Drew and others at the identification table and were kept quite busy with the fungi brought in by attendees who were anxious to know what was growing in their yards and nearby parks.

Young children were kept busy coloring mushroom pictures with the help of Maria Dobrowolsky who talked with them about the different kinds of mushrooms.

Children (as well as adults) enjoyed looking through the microscope with Dr. Amy Rossman from the Department of Agriculture.

Students from the Highland Academy in Gaithersburg, MD, under the mentorship of Ophelia Barizo, presented poster information on mushrooms found in Washington County.

T-shirts commemorating the 10th year anniversary of the MAW-Brookside Gardens Fair were designed and sold by Jennifer DePalma and Jeremy Tidus.

Fred Seymour (MAW Librarian) was more than happy to advise on books and publications on mushroom identification. Mushroom logs impregnated with shiitake spores and other mushroom merchandise were available for sale. **Connie Durnan**

A successful fair would not have been accomplished without 25 plus volunteers.



Why do we do it – and just what are we doing?

Mushroom Clubs: it's not really about what's edible or what can make you high, not that those questions don't come up over and over... Gary Lincoff, 2010

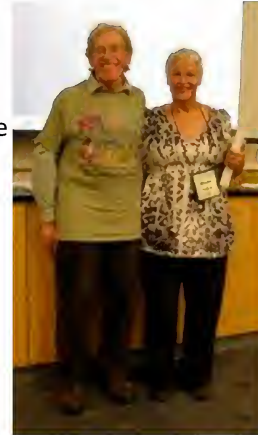
When I took a group to northern India some years ago, we met with local (continued page 11)

mycologists and their graduate students and went hunting mushrooms in places with romantic names like Kashmir. We asked about local mushroom clubs because we wanted to meet non-professionals who just went out in groups to hunt mushrooms, the way it's done in much of Europe and Japan and here in the States. We were told that mushroom hunting was only for the middle classes, that India was a poor country and that people had no leisure time to follow such pursuits. Whatever the truth of that statement, however, what interests me is what brings people together to hunt mushrooms in organized groups. Here in the States, despite our affinity for being joiners, for joining all kinds of groups for all kinds of reasons, very few people are actually members of mushroom clubs. If you travel a lot and go out with mushroom clubs around the country, or if you attend regional or national mushroom forays, it doesn't take many years before you know most of the people in those clubs. New people join, of course, and some leave for various reasons, but there's a known community of mushroom hunters who know one another, who seem to enjoy or tolerate one another's company, and who look forward to seeing others on mushroom hunts from year to year. It's like being in an extended family where you have no familial responsibility, just the pleasure of reunion.

There may be a hundred or a thousand times as many people in the States who hunt mushrooms on their own and never connect with any club as there are members of mushroom clubs, but we rarely run into them on our mushroom walks. When we do, we often discover that they're immigrants from Italy or Russia or South Korea and that their mushroom skills are far more advanced than their language skills. They are clearly hunting mushrooms to eat. Sometimes you see elderly gentlemen with sticks and paper bags looking for Hen of the woods, or small family groups of Asians looking for matsutake, or busloads of people looking for one particular mushroom, like the Russians who go to the Cape to collect *Leccinum*.

Mushroom clubs, however, are not eating societies and nor are they dens of drug users hunting magic mushrooms. Even if the first thing you ask about this or that mushroom on a mushroom walk is "is it edible", or "can you get high", what keeps most people coming on mushroom club walks is not about dinner or getting stoned. What brings people out into the woods, in the heat and humidity of summer and the chill of fall, in the midst of so many insects and ticks, and insect and tick-borne diseases, in the presence of rattlesnakes and copperheads, in the certainty of an eventual rash from poison ivy (in the east) or poison oak (in the west), is most certainly not about dinner. It's not about hiking, either. People can hike better if they're not constantly stopping to look at mushrooms. Nor

Gary presenting awards of most interesting mushroom found



with Dianna Smith



with Anna Gerenday



Bill Yule

is it like after a war when food is scarce and people are forced to hunt mushrooms to survive. Not only do mushroom club members appear to be especially well-fed individuals, but even if what they really want are choice edible wild mushrooms, most of the best of these can now be purchased at farmer's markets or in upscale groceries. There's no need to get sweaty and muddy and bitten up just to get a basketful of mushrooms. There's not even any need to risk getting poisoned anymore. Something else is at stake.

One mushroom hunter told me he went to forays to see old friends. If he wanted mushrooms, he hunted on his own. Many of us are like him. We know our 'spots,' the places where we can find the mushrooms we want to harvest. Club mushroom walks are often places of great distraction. You get yourself involved in conversations and you forget to look for mushrooms. No one wants to go home with an empty basket, but even if the goal is to fill the basket with choice edibles, mushroom club hunters are far more often disappointed than satisfied.

So, what's going on? Why are we out there beating the bushes? Why are we so interested in weather reports, like where it has rained recently? Why are we willing to go to places that seem manifestly less likely to produce lots of mushrooms, like, say, Jamaica Bay Wildlife Refuge, than other places that are reliably rewarding year after year? Why are so many of us willing to go so far to hunt for mushrooms that we are more likely to find closer to home? What is that hunger that takes us out to hunt for mushrooms in the first place? Some of us couldn't care less about edibility, and even fewer care (or say they care) about getting high.

Freud is said to have taken his family out mushroom hunting on weekends, but he doesn't appear to have written about the psychodynamics of it. Others have and have suggested that we are acting out an archetype, a journey into the wilderness looking for the Promised Land (read, for example, chanterelles), or an unarticulated attempt by urban and suburban people to reconnect with the land or with an archaic hunting and gathering way of life, if only for a few hours at a time. Maybe you know exactly why you hunt mushrooms, and in particular, why you choose to do it in groups, with a schedule of where to go on which date. If it were just for social reasons, there are far easier ways to connect with other people than stumbling about in the woods, complaining of the heat or the bugs or no mushrooms.

It's a hot day in July. It hasn't rained much the past week or so, and yet a dozen or more people show up to walk through a woods looking for mushrooms. Every little mushroom find is exciting to someone on the walk. Things so small they are even difficult to hold and look at can become objects of intense interest, even affection. Sometimes with a hand lens they appear to be quite beautiful. Sometimes a mushroom has a distinctive fragrance that entrances even if it's not edible. Sometimes mushrooms stop us in our tracks because they are so colorful, so plentiful, so curious or so beloved. Even destroying angels can take your breath away, even without eating them. Edibility is beside the point. We are seeing something that means more to us than the oak trees nearby. We can't really say what it is that it means, just that it is somehow meaningful, and we feel grateful for having seen it. I see people walking past bins of beautiful wild mushrooms in the markets. They



with Frank Lotrich



with a younger, budding mycologist named Owen T.

don't do more than give them a passing glance. Why do these same mushrooms immobilize us when we see them in the woods, or set us on them like people who haven't eaten in days? And this is especially perplexing if we know that what we've just found isn't even edible? Or rare? Or even beautiful? It's just another mushroom.

What do you think is going on here? Send your thoughts to me (Gary@noahsquark.com) and we'll discuss this in a future issue. **Gary Lincoff**

Reprinted from Connecticut-Westchester Mycological Association, Summer 2010; Courtesy of the Snohomish County Mycological Society, *Mushroomer*, Aug-Oct 2011; Courtesy of The Newsletter of the Colorado Mycological Society, *SPORESafield*, September 2011

CATALOGING NEWLY DISCOVERED SPECIES LAGS: DR. WATLING'S VERY OWN MUSHROOM Gautam Naik

The Wall Street Journal, Sept. 7, 2011

DAWYCK, Scotland - On a recent ramble through the Scottish woods, Dr. Roy Watling fingered a dull yellow mushroom and said proudly: "Do you know whose fungus that is? It's mine."

The mushroom, *Boletus porosporus*, isn't especially rare, isn't poisonous, and, Watling says, "It has a taste like old socks."

He knows what he is talking about: He discovered and officially named the species more than four decades ago. After a lifetime spent rummaging in the woods, Watling, 74 years old, has discovered and classified more than 50 fungus species around the world. But now, like some of the toadstools he studies, Dr. Watling is part of a vanishing breed.

"I wouldn't say there's a shortage of mycological taxonomists in the U.K.," says Watling, formerly of the Royal Botanic Garden in Edinburgh. "There ain't any."

Who wants to spend his life rooting around dusty museum drawers and delving into field identification manuals in order to meticulously classify bugs and toadstools? A precious few.

Founded in 1758 by Swede Carl Linnaeus, taxonomy was long a flourishing science. Even today, it underpins the study of biodiversity, evolution, and animal conservation.

But Britain doesn't have enough taxonomists to help it catalog lichens, fungi, and insects. In the U.S. and elsewhere a similar shortage exists for specialists of certain types of black flies, beetles, nematodes, mites, spiders, centipedes, millipedes, clams, and parasitic wasps.

Fewer students are choosing the discipline, preferring more glitzy and modern fields such as molecular biology. Simultaneously, the grand old men and women of taxonomy are in or approaching their retirement.

"There's a false impression that taxonomy is old-fashioned, like stamp collecting," says Dr. Quentin Wheeler of Arizona State University, an expert in slime-mold and fungus-feeding beetles. "But to me there's no greater thrill than being the first human being to knowingly lay eyes on a new life form in the solar system."

Wheeler, whose doctorate is in entomology, has tried to convince others of the allure. In 2005, he and a colleague named three new species of beetle after President George W. Bush and two members of his administration: *Agathidium bushi*, *A. cheneyi*, and *A. rumsfeldi*.

To Wheeler's surprise, President Bush called him. "He said he was honored," recalls Dr. Wheeler, who has also named beetles after Roy Orbison, the late singer-songwriter, and Stephen Colbert, of Comedy Central fame. It's a time-honored practice; taxonomists, after all, can have fun, too. There's a spider called *Apopyllus now*, and a small, furry fly known as *Pieza kake*. A snail species has been called *turbo*.

Taxonomy, nonetheless, hasn't managed to shake off its fusty reputation. Today, there isn't a single lichen taxonomist at British universities, according to the British Lichen Society. A recent House of Lords report similarly noted a "clear decline" in insect taxonomists.

CABI International, a U.K. nonprofit group that helps countries fight agricultural pests and diseases, employed a dozen formally trained taxonomists in the 1980s. Today, the demand for taxonomic services is greater, but CABI employs just two such specialists.

Watling, who wears hearing aids in both ears, belongs to a dwindling generation of obsessed taxonomists.

Three mushroom species bear his name, including the rare *Ramaria watlingii*. He has been described as "a fun guy." His wife gave him a sweater printed with the words: "Mycology—a good walk spoiled."

"Once you get fungi under your skin, you can't let it go," says Watling, who is now training amateurs to do the mushroom-spotting job that professional scientists used to do.

On a recent walk in the woods here, Watling and three colleagues collected several mushroom specimens and took them back to a lab at the Edinburgh Botanic Garden.

They inspected the features of each specimen under a microscope. Those details were then laboriously checked against illustrations in a thick field identification manual.

"It is hard work," said Watling. "After a day of this, I'm knackered."

A nearby closet was stacked with boxes of unidentified mushroom species collected in New Guinea, Burma, and Nigeria, among other places. Hundreds of other specimens were stored in an adjoining room. Many have yet to be inspected.

The problem isn't restricted to fungi. From microbes to mollusks to marine algae, thousands of organisms are discovered each year. Yet there are fewer taxonomists to say what they are—and where on the tree of life they fit. One recent study estimated that 40 percent of no-name plants are currently being stored in museums around the world.

"If you want to conserve things, how...can you do that if you don't accurately describe what they are?" says Watling. "We believe we know only 15% to 20% of all the fungi out there, so there's a lot of work to do."

About 1.2 million species of living things have been cataloged so far, according to one estimate. A recent study suggests that another 7.5 million have yet to be identified. Scientists are racing to tabulate new species—even as many become extinct.

Knowledge about individual species can be useful. When Nicholas Evans, author of "The Horse Whisperer," fell dangerously ill after picking and then eating some mystery mushrooms in 2008, British doctors sent the contents of the author's stomach to Watling.

He immediately identified the fungal culprit as the highly toxic species *Cortinarius rubellus*, or the Deadly Webcap, and advised doctors on how to treat Evans. The author had to go on dialysis and later had a kidney transplant. Watling says he is frequently called on for help in mushroom-poisoning incidents.

Watling has had other indirect encounters with celebrity. A few years ago, when real-estate tycoon and reality-TV star Donald Trump announced plans to build a new golf resort on the sand dunes of Scotland, Watling was one of many local residents who tried—and eventually failed—to scuttle the plan.

He was worried about the mushrooms. "We've got enough bloody golf courses in Scotland," says Watling. "But we know so little about the fungi that live among the sand dunes."

Reprinted courtesy of Bulletin of the Puget Sound Mycological Society, *Spore Prints* #475, October 2011

NOT JUST KINGDOMS BUT COMMUNITIES

Condensed from Musings by Susan Goldhor Boston Mycological Club, *Bulletin*, Vol 66 #2, 2011

When Linnaeus proposed a classification system in the 1700s, living organisms were grouped into two Kingdoms, Plantae and Animalia. Fungi were included as plants. In the late 1800s Protists were added as a third kingdom, Protista, and in 1956 Bacteria were separated from Protista into a kingdom of their own. In 1969 Fungi were separated from Plantae into a fifth kingdom, Fungi. In 1977, the Kingdom Bacteria was separated into Eubacteria and Archaeobacteria, making six kingdoms that include all living organisms.

Moving from two kingdoms to five and, more recently, to six represents a big step forward in our knowledge of the Earth's biota. But recent advances in genetic analysis suggest that all living organisms except Archaeobacteria are made up of not simply one but several kingdoms. Each human, for instance, is home to about 160 microbes, each of us with a somewhat different set of species. Humiliatingly, almost 99 percent of our genetic code turns out to consist of what used to be called "junk" DNA that is highly redundant and does not code for a protein that manufactures either a structure or an enzyme. And one of the most intriguing recent findings is that our DNA may be incomplete. That is, if you could make a human out of purely human DNA, that human would be unable to survive.

If you put each of us into a blender and reduced us to our component cells and then analyzed each cell, only about one in ten would have that much-hyped human genome. The other nine cells could be those of bacteria, fungi, mites, and other tiny cohabitants.

So if only 10 percent of our cells are human, what are we? We're not simply humans. We're not just individuals. We're ecosystems. Just like the forest or the meadow, we're the sum of all the species that compose us. And like the forest or the meadow, we need almost all of them.

One of the most important of these components is mitochondria. Every cell in our body—and in the bodies of essentially all other eukaryotes, including plants and fungi as well as protists —contains copies of an endosymbiont called mitochondria. Mitochondria supply living cells with energy in small usable packets. Mitochondria are believed to have originated as bacteria. This is because (1) they contain their own DNA, which resembles that of bacteria; (2) they can only come from the division of other mitochondria; (3) they possess certain enzymes similar to those of bacteria, and (4) they have an innermost membrane that is strikingly similar to a bacterial cell wall (and not at all similar to an animal cell). Mitochondria have been with us so long now that neither of us could survive without the other. And if that makes you think of lichens, you're not the only one.

In addition, there are about 100,000 elements in the human genome that can be traced to a virus ancestor. They make up about 8 percent, all told, of our genome. All of the genes that encode proteins make up only 1.2 percent of our genome. So we're really more virus than human.

Superorganism. Chimera. Biome. Ecosystem. We may not be as clear inhabitants of the Kingdom Animalia as we used to think, but we live in bodies that are far more cosmopolitan and complicated than we ever dreamed. No longer can we regard bacteria or fungi or protists or viruses either as exotic and bizarre or as pure pathogens. They are in our bodies. They are in our cells. They are in our chromosomes.

To paraphrase Pogo, "We have met the kingdoms and they are us."

Courtesy of the Bulletin of the Puget Sound Mycological Society, *Spore Prints* #476, Nov. 2011& Susan Goldhor, BMC

CLUB NEWS OF NOTE

IMA Scholarship Awardees Announced

In the previous issue of *The Mycophile* [51:3 electronic version] the Illinois Mycological Association's (IMA) gave notice of scholarship aid to support undergraduate and graduate student research and education in fungi was mentioned. The IMA shared their announcement with professors in Illinois. The selection committee was made up of IMA members Dr. Andrew Wilson, of the Chicago Botanic Garden, Joe McFarland and Dr. Patrick Leacock of the Field Museum.

The IMA has announced Lynnuan Johnson and Gerry Presley as the recipients of its scholarship program for 2011.

Lynnuan Johnson is a masters student with Dr. Andrea Porras-Alfaro at Western Illinois University. He is working on White Nose Syndrome that is decimating bat populations in the colder climates of North America. His work involves sampling the psychrophilic (cold-loving) fungi from these bats to monitor the progression of this syndrome west. White Nose Syndrome (WNS) has been reported as far west as Indiana, but has yet to be reported in Illinois. He is currently sampling fungi from healthy bats in the midwest to monitor this progression. He wants to do further work to determine how WNS might affect or be affected by the harmless fungi commonly found on these bats.

Gerry Presley is a senior undergraduate student working with Dr. Andrew Methven at Eastern Illinois University. He is interested in testing how fungi can be used for bioremediation. The chemical atrazine is currently used as an herbicide, but it is notorious for its environmental side effects such as altered sexual development in amphibians, developmental abnormalities in animals and even tumors in rats. As a result it has the potential of being a serious health risk to humans given its ability to permeate soils and enter our water supplies. Gerry is exploring the ability of fungi to produce natural enzymes that will break down atrazine by growing several different species of fungi in cultures that contain the chemical. He will then compare the ability of different fungi to metabolize atrazine and determine their utility in mycoremediation efforts.

Congratulations to the awardees and also to the IMA for supporting student mycological research.

The recipients of the awards will be expected to present their results to the IMA at the conclusion of their work.

Congratulations also to the Mycological Society of San Francisco for expanding their scholarship program for 2011-2012 from a graduate student scholarship to educational scholarships for teacher K-12 and their students. The MSSF's stated goal is to present teachers with more resources to help further classroom interest and study into the wonderful world of fungi. More information is available in the Education Section of their web site www.mssf.org.

Beware – Your Photos may be Geotagged!

By Dennis Aita, Vice President, New York Mycological Society

If you are taking photos with your iPhone or some other smartphone and posting them on Facebook or some other social network your photos may have been geotagged (geographical coordinates embedded in their metadata) without your knowledge. A morel hunter recently found out the hard way how our new technology works! (<http://www.sheersoycandles.com/blogs/articles/3156552-morel-mushroom-enthusiast-loses-secret-spot-to-high-tech-hunter>)

You definitely should turn off the geotagging feature on your phone unless you really want others to know where your choice mushroom spots are located!

Reprinted courtesy of The New York Mycological Society Newsletter *NYMS Summer 2011*

Fungi Poster wins first prize from NSF

"Introduction to Fungi," by Kandis Elliot and Mo Fayyaz of the University of Wisconsin, Madison, was the first place prize winner in the Informational Posters and Graphics category of the 2010 Visualization Challenge, sponsored by NSF and AAAS. According to judge Alisa Zapp Machalek, "The fungi poster was a clear winner. That was just amazing."

The poster is available at www.nsf.gov/news/mmg/media/images/scivis1_h2.jpg

Missouri's Edible Mushrooms

<http://mdc.mo.gov/discover-nature/outdoor-recreation/how/mushrooms/edible-mushrooms>

Mycelium Packaging... Industrial Uses of Fungi

Edited from an article by **Adam Fisher**, *Time*, Monday, Feb. 08, 2010 and material provided by

Sue Van Hook, Ecovative Design and Skidmore College, Oct 1, 2011

"The fiber and fungi community has used the interwoven filamentous nature of fungal mycelia in making felts and papers for decades. The concept of using the mycelium as a physical resin is one more application of the fungal network." Van Hook In December, Philip Ross, an inventor and an amateur mycologist, completed what is believed to be the first structure made entirely of mushroom. Using 500 bricks of mycelium he grew and cut, he constructed an archway 6 ft. high and 6 ft. wide. He named it "Mycotectural Alpha" and it is currently on display at a gallery in Germany.

Two recent engineering graduates of Rensselaer Polytechnic Institute, Eben Bayer and Gavin McIntyre observed the tenacious binding properties of fungal mycelium in the forest. They speculated that the mycelium might act as a natural resin or glue for biological composites.

Once the densely packed mycelium is dried, it has some remarkable properties. It's nontoxic, fireproof, mold- and water-resistant, it traps more heat than fiberglass insulation and has high flexural, tensile and compressive strengths. It's stronger, pound for pound, than concrete.

Bayer and McIntyre's company is named Ecovative Design and they are building a myco-factory in Green Island, NY. The company's first product, a green alternative to Styrofoam, is called EcoCradle. This biodegradable packaging buffer consists of protective corners and flat-stock packaging to protect office furniture, computers, wine bottles, even NOAA bouys, etc. Once received by the customer, EcoCradle can be broken up and used to mulch garden beds, added to compost piles or used for paths and walkways. The average time for it to decompose at home is 1-3 summer months depending on the rainfall. It takes less than two weeks to biodegrade in an industrial composting facility.

The material is grown on a substrate of agricultural waste, empty seed husks from rice or cotton. After the husks are cooked, sprayed with water and myco-vitamins and seeded with mushroom spores, the mixture is poured into a mold of the desired shape and left to grow in a dark warehouse. A week or two later, the finished product is popped out and the material rendered biologically inert.

According to CEO Bayer's engineering tests, densely packed mycelium is a woodlike equivalent to plastic and is strong enough to be used in place of wooden beams. "It's not so far-out," he says of Philip Ross's art house.

Read more: <http://www.time.com/time/magazine/article/0,9171,1957474,00.html#ixzz1Zl2W9ABp> and www.ecovatedesign.com

An earlier form of myco-packaging is the Life Box™ which re-invented the cardboard box. Within the corrugations of the Life Box™ are hundreds of tree seeds and thousands of friendly spores of mycorrhizal fungi. Once a customer receives whatever is shipped inside, the box is torn up, planted, and tree seedlings emerge. 'A solution to climate change, one box at a time' according to Paul Stamets. www.lifeboxcompany.com

"Common Name" Competition

The previous "Mushroom of the Issue" [*The Mycophile* 51:3] related a story from Great Britain that the James Hutton Institute was assisting *The Guardian* [UK] in a 'Name the Species' competition to create common names for various species including a mushroom recently found in Scotland. Now, for the rest of the story.

Rachael Blackman's common name for the *Octospora humosa* perfectly captured the appearance of the orange, moss-dwelling fungus, which is a member of a group of fungi called discomycetes or "discos", with the name "Hotlips".

"It's very simple, it's very apt and it's the kind of thing that people will remember, which cuts to the heart of the competition," said Pete Brotherton, of Natural England, one of a judging panel including *Guardian* columnist George Monbiot and Liz Holden of the British Mycologists Society.



Brotherton said he hoped the popular competition, now in its second year, would draw people into the natural world and get them looking for these unheralded species.

Among other winners were Diane Williamson who came up with "Ascot hat", for a pink-tinted mushroom [*Xerocomus bubalinus*] that would not look out of place as race-going headgear and was first recorded near Ascot.

And, Halina Pasiecznik who gave the common name, "Sunburst lichen" to *Lichenomphalia alpina*.

The judges concluded that *the name fits it perfectly as this lichen lives in peaty areas and looks just like a tiny burst of sunshine against the dark soil.*

See www.guardian.co.uk for July 20, 2011 for more information

Courtesy of the *Bulletin of the Puget Sound Mycological Society Spore Prints* # 474, September 2011



BOOK REVIEWS

Steve Trudell

Field Guide to Common Macrofungi in Eastern Forests and their Ecosystem Functions

Michael E. Ostry, Neil A. Anderson, and Joseph G. O'Brien

Northern Research Station, USDA-Forest Service General Technical Report NRS-79

Spiral-bound softcover, 82 pp.

Free*, order from:

U.S. Forest Service, Publications Distribution

359 Main Road, Delaware, OH 43015-8640

This small (5.5 × 8.5-inch) handbook covering 61 species or species groups was produced by three plant pathologists from the U.S. Forest Service (MEO and JGO) and the University of Minnesota (NAA). It is intended as a quick reference to selected common macrofungi from four broad forest ecosystems that occur in the Midwest and Northeast - aspen-birch, northern hardwood, lowland conifer, and upland conifer. Six introductory pages explain the intent of the book and cover the usual basics of what mushrooms are, names of their parts, and so on. No information about the forest types is provided (only an attractive photo of each one used on the section dividers). I would have liked to see at least a list of the main tree and shrub species characteristic of each, and maybe a map showing their distribution. The species accounts are organized by forest type, and then by lifestyle (mycorrhizal, saprotrophic, or parasitic) and substrate (on ground or on wood). The descriptions include key identification features, season of fruiting, ecosystem function, edibility, and comments. All of these are very brief, usually less than a sentence and rarely as much as three sentences, and in most cases are not sufficient to allow confident identification of the species. Given the large amount of white space on each page, it's unfortunate that the accounts were not made more comprehensive. The text is accompanied by one (usually) to three decent-sized photos. The quality of most of them is good, although not all illustrate the features sufficiently to allow identification. For instance, several show only the upper or lower surface of a polypore. The photo of *Hericium* on the back cover is beautiful. Every page in the descriptions section carries a warning for those interested in eating mushrooms, "DO NOT eat any mushroom unless you are absolutely certain of its identity." To that, I would have added "and have confirmed that it is edible for most people."



Despite the brevity of the descriptions, a number of the species can be reasonably well identified from the information provided. However, there are a number of mistakes that should be noted. The destroying angels are said to cause 95% of fatal mushroom poisonings. In North America at least, the major culprit is their close relative *Amanita phalloides*, the death cap. Aspen boletes (*Leccinum aurantiacum* and *L. insigne*) are listed as edible; however, members of this group have caused numerous poisonings in the Rocky Mountains and Pacific Northwest and so should be consumed with caution until we have a better understanding of just which species is/are involved and under what conditions. The photo labeled *Leccinum scabrum* is not that species; it appears to be a yellowish-capped (from fading?) member of the *L. aurantiacum* group. The fruitbody of *Grifola frondosa* is not a good representation of that species; it appears to be aborted, and looks more like a cattle plop than a multi-capped polypore. The pinkish brown stipe reticulation and overall pale coloration of the solo, uprooted *Boletus edulis* make me suspicious of that identification; maybe a *tylopilus*? Or perhaps it is just one more form of king bolete, a highly variable species. The photo of *Hygrocybe conica* is of something else, perhaps a rather orangy *H. coccinea*, and the description fails to note the blackening reaction that is a key feature of *H. conica*. *Clavariadelphus ligula* is ectomycorrhizal, not a litter-rotter. The photo labeled *Cordyceps* (now *Elaphocordyceps*) *ophioglossoides* shows one of the globose-headed species such as *E. capitata*. *Amanita brunnescens* is referred to as Swamp Death Angel, incorrectly suggesting it is a deadly species. The photo of *Gomphidius glutinosus* is a *Chroogomphus*, perhaps *C. vinicolor*. The two whole-mushroom photos of *Hydnum repandum* show a *Hydnellum*. The photo of *Lactarius volemus* is a different *Lactarius*, perhaps *L. argillaceifolius*. *Clavicornia pyxidata* (now *Artomyces pyxidatus*) is categorized as a ground-dweller when it nearly always is found on rotting wood.

Normally I would not recommend a book with such skimpy descriptions and so many errors. However, given the attractive price, this is worth ordering, annotating the errata, and using in conjunction with more comprehensive guides.

***[Editor's note: The USDA provided copies to NAMA for distribution. NAMA members who did not receive a copy may request a copy by contacting Rebecca Rader, Executive Secretary, PO Box 64, Christiansburg, VA 24073 or rebeccarader@hotmail.com].**

Good Mushroom, Bad Mushroom: Who's who, where to Find them, and how to Enjoy them Safely

John Plischke III

2011 / ISBN 978-0-9819615-8-3

St. Lynn's Press, P.O. Box 18680, Pittsburgh, PA 15236
412-466-0790 / www.stlynnspress.com
\$17.95 (spiral-bound with semi-hard cover, xi + 87 pp.)

This is an attractive book that covers 37 species, or species groups,

from throughout North America. The author, John Plischke III, is well known as a Vice President of NAMA, founder of the Western Pennsylvania Mushroom Club, and tireless host of the successful 2011 NAMA Foray.

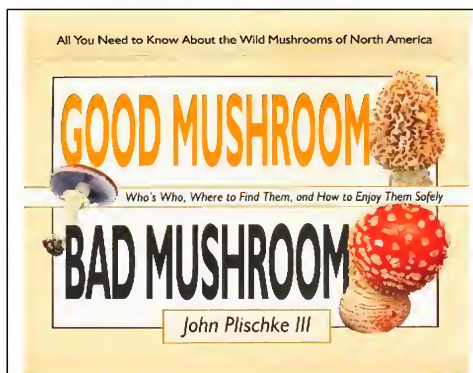
At the outset, let me say that I was extremely surprised to see emblazoned across the cover "All you need to know about the wild mushrooms of North America." That, combined with the Good-Bad title (St. Lynn's also has published Good-Bad books about weeds and bugs) gives the impression that mushrooms are either good or bad, that edibility is all that distinguishes good from bad (actually, the vast majority of mushrooms are neither poisonous nor good to eat), and that this book is all one needs to figure out which are which. Nothing could be farther from the truth. The world - political, fungal, or otherwise - is far more complex than can be boiled down to simple dichotomies, and although one needn't know everything about mushrooms in order to enjoy finding and eating some of them, no book of whatever size could ever hope to provide a complete understanding of wild mushrooms. In fairness to the author, it is evident from his comments that he doesn't share the publisher's simplistic view of wild mushrooms, and he clearly emphasizes the need to refer to multiple sources of information.

OK, with that out of the way, what about the book itself? It's short (only about 100 pages), small (about 7 × 6 inches, bound at the top, along the long dimension), and nicely presented. Eleven pages of introductory material cover how to collect and prepare/preserve wild mushrooms, some of the basic jargon used to describe mushrooms, and how to make a spore print. The bulk of the book comprises descriptions and commentary on 11 inedible/poisonous mushrooms and 26 edible ones. It concludes with eight recipes, a brief list of resources (six of them), the index, and acknowledgments.

Each of the species accounts is presented on a 2-page top-bottom spread that includes a description of the macroscopic features, followed by comments on where and when to find it, possible look-alikes, and edibility. In most cases, the text is accompanied by two photos - usually two views of the species (sometimes of the same mushrooms), but occasionally an image of a lookalike species or the mushrooms being cultivated or served in a dish. The descriptions are fairly extensive and written in a conversational style. The occurrence information is generally good as pertains to habitat, but less reliable when it comes to distribution and frequency. We simply do not know enough about most mushrooms' distributions to accurately describe them, and their abundance varies so much from place to place and time to time that it is impossible to categorize their continent-wide occurrence in terms such as occasional, common, and so forth. In most cases, the look-alike comments are not sufficient to clearly distinguish the species, so one would need to turn to a more comprehensive book for additional information and illustrations, and Plischke is careful to point out the need for multiple books if one wants to identify mushrooms.

The photographs are generally good, although it would have been helpful to have them reproduced at larger size so that the details could be seen more clearly. Some, such as the yellow morel images, are quite striking, while those of *Suillus brevipes* and matsutake will not allow confident identification. Although I like the idea of more than one photo of a species, one large photo might have been preferable to the two small ones (of course, two large ones would have been better still).

The complement of edible species is well selected and covers most of the commonly eaten ones such as chanterelles, king bolete, morels, oysters, matsutake, and shaggy mane, plus some used primarily for health reasons, such as chaga and *Ganoderma tsugae*. The inedible/poisonous species include representatives of most of the groups to be avoided, but inexplicably do not include the mushrooms responsible for most of the fatal poisonings in North America (the death cap / destroying angel amanitas and, to a lesser extent, certain small lepiotas). Among the amatoxin-containing species, only *Galerina marginata* is presented. Also absent is the species that causes more reported North American poisonings than any other (*Chlorophyllum molybdites*) and *Amanita pantherina*, which is the number-one poisoning culprit in the Pacific Northwest where I live. Certainly these species are part of "all you need to know about wild mushrooms."



All in all, this is a nice little book and could be a good companion to more comprehensive guides. However, it falls far short of providing everything you need to know to hunt and eat mushrooms safely, so don't be misled by the publisher's marketing hype and try to use it as a stand-alone ID resource.

Fascinating Fungi of New England

Lawrence Millman

2011 / ISBN 978-1-936571-01-7

Kollath+Stensaas Publishing, Suite 406, 394 Lake Ave. S., Duluth, MN 55802

www.kollathstensaas.com

\$14.95 (softcover, vii + 134 pp.)



This third little (8 × 6 inches) book was written to introduce the curious amateur to the fascinating world of fungi. As such, it includes a number of common species, some not-so-common species, some weird ones, colorful ones, and popular edible ones. It makes no attempt to be comprehensive and expressly excludes the "little brown jobs," or LBJ's, known elsewhere as LBM's, little brown mushrooms.

Although ostensibly targeted at fungal newbies, the publisher touts the book as "the first ever guide to the mushrooms of New England," seemingly in an attempt to attract buyers from among the already-initiated. Now while the publisher's claim might strictly be true (I can't recall any other guide dealing with the mushrooms of New England and only New England), it is more than a bit misleading as there are already several good guides that cover New England's mushrooms, including *Mushrooms of Northeastern North America* (Bessette, Bessette, and Fischer) and *Mushrooms of Northeast North America* (Barron). So, if you already have one of the earlier, more comprehensive, guides for the Northeast, do you also need this one? And, if you have no guides for the area, should this be your first? Let's see.

The book commences with 11 pages of introductory matter explaining what mushrooms, ascomycetes, and basidiomycetes are, main features of mushroom anatomy, the general mushroom life cycle and lifestyles, where, when, and how to collect mushrooms, hints for identifying your finds, the question of edibility, and how to use the book. The species accounts comprise the bulk of the book, and are followed by a list of recommended books, glossary, index, and short list of magazines, websites, and New England mushroom clubs.

The species accounts cover 134 mushrooms, 1 mold, and 4 slime molds. Each typically occupies about two-thirds of a page. With the exception of a subheading for habitat and season, the text is presented in commentary format rather than strict categories (cap, gills, stalk, edibility, etc.), and includes a variety of information, not just the descriptive details of size, color, and so forth. Millman has a fondness for the unobtrusive and little-appreciated fungi and many of his comments present information that you won't find in other books. He also has a somewhat corny sense of humor and is not bashful about sharing it. It contributes to his distinctive entertaining style, but I must confess to emitting a "really-bad-pun"-type groan now and then. For each species, there is an attractively rendered illustration (by Rick Kollath), usually in pictorial, rather than documentary, style. The main illustration is accompanied by a small icon depicting gill attachment, often one showing spore color, and others indicating non-edibility or deadly toxicity, plus notes on the months in which it fruits, cap diameter and stem height, and key ID features. The illustrations are charming and mostly accurate, although the color is off in a few and many do not show all the features you would need for identification. A first in my experience is the inclusion of the author, for scale, in the illustration of a rather large *Bondarzewia berkeleyi*!

The species accounts are augmented by a number of sidebars that provide interesting information about such things as the Meixner test, the reason russulas are brittle, and mushroom bioluminescence.

Millman makes clear that the book is not intended to be a guide to edibility, and he is true to his word. Edibility is ignored for most species, typically being explicitly addressed only for the poisonous ones. While this likely won't bother non-mycophagists, I suspect that many readers will be unhappy with that approach. For those who would use the book for identification in general, it should be noted that there is little, if any, discussion of look-alikes.

Although I think this is a fine book in most respects, disappointingly, many bits of misinformation have crept into it. For example, the description of fungus sex has it backwards. With respect to two "horny mycelia" of the same species in a myco-singles bar, we are told "... they try to mate the moment they encounter each other. Most of the time they aren't successful because they're of different genders or mating types." In actuality, for most fungi, a high percentage of encounters with other mycelia would be successful because a strain is compatible with all mating types *other than* its own. Thus, a horny mycelium of a fungus such as *Schizophyllum commune* has its choice of many thousands of different mating types and would be able to play the field. It is not true that "a mycelium will eat anything that's organic." Different species have different preferences and none can "eat" everything. The Canadian morel mass poisoning occurred at a retirement banquet for the Vancouver, B.C. Chief of Police. It did not involve a bunch of Mounties at a

convention, although admittedly the vision of red-coated Dudley Do-rights in gastrointestinal distress is a bit more evocative than the actual event. The American matsutake was described by Charles Horton Peck in the early 1870's from material collected in New York, so the speculation that it migrated to the East from the West Coast in the last 50 or so years cannot be correct. Boreal forests have evolved with and are well adapted to fire, so the statement that "In all probability, the Yukon's forest fires are the consequence of global warming" is true only if one is referring to the warming that has taken place since the end of the Pleistocene glaciation 10,000 or so years ago (although the recent warming attributed in large part to human activities could be increasing the frequency of fires). And there are (usually minor) problems with many descriptions, such as the illustration for the coral-like *Clavaria zollingeri* showing unbranched clubs that appear to be *C. purpurea* (destined to reside in the genus, *Alloclavaria*, when the transfer is validly published). So, given these accuracy issues, should you buy this book? I say "yes" whether it would be your first guide for the Northeast, or an addition to your existing guides. I think it will do a good job of engaging those new to the world of fungi. It is informative, but not too heavy, and Millman's humor makes for a fun read, despite those occasional groans. The pleasing layout and attractive illustrations make it perhaps more accessible to a newcomer than the existing photographic field guides would be. Thus, it would make a good gift for someone to whom you would like to introduce the Fungi. It also is worth having for those who already own a Northeast guide, as it includes some species not found in other books, the illustrations provide additional images that give a different perspective than photographs, and the comments often present information you won't find elsewhere.

Steve Trudell, Seattle, Washington

MYCO NEWS

Mitotic Spindle

Over a two-year period a team of cell biologists, computer scientists, physicists, and artists developed a proposed structure for the mitotic spindle of yeast during metaphase. The yeast is *Saccharomyces cerevisiae* as used for baking and brewing and is one of the most commonly used eukaryotic model systems in biology.

The computer image won an award from the National Science Foundation in 2010. The image is available at

http://cismm.cs.unc.edu/wp-content/uploads/2011/05/cismm_entry_science_contest_poster.2.tif

For more information see: www.nsf.gov/news/mmg/media/images/scivis1_h2.jpg

Insight into Structure and Assembly of the Nuclear Pore Complex by Utilizing the Genome of a Eukaryotic Thermophile

Scientists have found that the fungus *Chaetomium thermophilum*, which lives in soil, dung and compost heaps at temperatures up to 60° C (140 F), contains proteins which are thermophilic (heat loving, i.e. stable at high temperatures), similar to our own, and show improved properties for structural and biochemical study.

The scientists compared the fungus' genome to those of other eukaryotes, organisms whose cells have a nucleus, and identified the proteins that make up the innermost ring of the nuclear pore, the channel that controls what enters and exits a cell's nucleus. Having identified the relevant building blocks, the scientists determined the complex 3D structure of that inner ring for the first time.

This advance will further our understanding of the complex molecular machines within cells.

See the article on Science Direct at [http://cell.com/fulltext/S0092-8674\(11\)00714-8](http://cell.com/fulltext/S0092-8674(11)00714-8) or at

<http://www.sciencedaily.com/releases/2011/07/110721150448.htm>

Myco-diesel: Fuel From A Patagonian Fungus

"Mycodiesel" is a novel name applied to the volatile organic products made by fungi that have fuel potential. A recent discovery is that of an endophytic *Hypoxylon/Nodulosporium* species, or one that lives within a plant, that makes the compound cineole along with a number of other compounds with enormous fuel potential.

Testing of the fungus *Gliocladium roseum* showed that, under limited oxygen conditions, it was producing a number of compounds normally associated with diesel fuel. It turns out that many of the compounds found in diesel fuel are either directly found as fungal products or other products that are closely related. This along with a number of other arguments suggests that some or all of the world's crude oil may have originated from microbial sources. Therefore, as the vast amount of organic matter in the world began the processes of decay, the reduced organic products resulting from these processes may have been trapped in the numerous shales of the Earth. It is from these sources that crude oil is mostly recovered.

www.science20.com/news-releases/mycodiesel_fuel_patagonian_fungus

www.livescience.com/researchinaction/achive.php

First Major Survey of Amphibian Fungus in Asia Completed

An international team of researchers has completed the first major survey in Asia of a deadly fungus that has wiped out more than 200 species of amphibians worldwide. The massive survey could help scientists zero in on why the fungus has been unusually devastating in many parts of the globe -- and why Asian amphibians have so far been spared the same dramatic declines.

The disease chytridiomycosis, is caused by the fungus *Batrachochytrium dendrobatidis* (*Bd*). The new survey shows that *Bd* is prevalent at very low levels in Asia. Other teams of scientists are analyzing the genes of the *Bd* fungus to find out whether strains from different parts of the world also differ in their virulence. If Asia is on the brink of a chytrid epidemic it might start in the Philippines because *Bd* in the Philippines today looks similar to *Bd* in early outbreaks in California and South and Central America.

<http://www.sciencedaily.com/releases/2011/08/110817130945.htm>

Newly Discovered Zooplankton Species Could Save Amphibians

Oregon State University researchers have discovered a breed of freshwater zooplankton, a variety of aquatic flea known as *Daphnia magna*, that they say can help combat the chytrid fungus, *Batrachochytrium dendrobatidis* (*Bd*), that has been devastating amphibian populations around the world. So far no one has attempted biocontrol of the chytrid fungus, but this *Daphnia* does eat the zoospore, the free-swimming stage, of the fungus. Hopefully, experts can use biological controls to simply reduce the density of the *Bd* in order to keep it from being fatal to amphibians.

<http://www.redorbit.com/news/science/2602703/newly-discovered-zooplankton-species-could-save-amphibians/index.html>

Courtesy of The Journal of the Los Angeles Mycological Society, *The Spore Print* #350, October 2011

Chinese Researchers Identify Insect Host Species of a Famous Tibetan Medicinal Fungus

A team of researchers analyzed over 4000 publications available on the insect species associated with the Tibetan medicinal fungus *Ophiocordyceps sinensis* (also *Cordyceps sinensis*). The fungus, known as the Chinese Caterpillar Fungus or 'Dong Chong Xia Cao' (winter worm, summer grass), is one of the most widely recognized traditional Chinese medicines and recent studies have shown it to possess a variety of medicinal effects. The fungus is endemic to the Tibetan Plateau, contributes billions of RMB (Chinese yuan) to the rural economy, and has been listed as an endangered species by the Chinese government.

The relationships between the reported insect species [13 genera of Chinese *Hepialidae* moths] and *O. sinensis* were analyzed based on the overlap of their geographic distribution and altitude range. The results of this study provide basic information for management of the insect resources and for the conservation and sustainable use of *O. sinensis*. It will lay a foundation for further studies of the relationship between the fungus and its hosts.

The ascomycete parasitizes larvae of moths and converts them into sclerotized bodies from which the fungal fruiting body grows. More information and a picture of a host moth may be found

<http://www.sciencedaily.com/releases/2011/09/110908124620.htm>

Courtesy of The Journal of the Los Angeles Mycological Society, *The Spore Print* #350, October 2011

Humongous Fungus

The giant fungus, estimated to be 20 years old, was discovered growing under a felled and rotting tree in China according to the BBC. The fruiting body is from the perennial fungus *Fomitiporia ellipsoidea*. It formed a long, brown shape up to 35.5 feet long, 2.8 feet wide and about 2 inches thick. Parts of it broke off into shards. Scientists have not removed the entire thing, but density tests suggest it weighs at least half a ton.

For more information see;

<http://www.popsci.com/science/article/2011-08/chinese-researchers-find-worlds-biggest-fungus>

Courtesy of The Journal of the Los Angeles Mycological Society, *The Spore Print* #350, October 2011

New Class of Fungi, Previously Hidden in the Soil, Identified

A visiting researcher from Sweden, Anna Rosling, has led an international team in culturing, characterizing, photographing, and formally naming a new class of fungi that previously had only been identified through DNA sequencing. Researchers say it represents an entirely new class of fungi: the *Archaeorhizomycetes*. There may already be as many as 250 species in the new class.

The new class has been placed within the subphylum *Taphrinomycotina* in the *Ascomycota* phylum. Species in the new class are filamentous and threadlike, and because they lack macroscopic features they can not be identified without DNA testing. They do not appear to form mycorrhizal structures, and they may receive nutrition from dead and decaying plant material. The new findings provide evidence that *Archaeorhizomyces*' apparent association with roots of plants is possibly though association with mycorrhizal fungi.

For more information and photos see Science Daily articles:

<http://www.sciencedaily.com/releases/2011/08/110811142819.htm>

<http://www.sciencedaily.com/releases/2011/08/110811142823.htm>

Courtesy of the Newsletter of the Humboldt Bay Mycological Society, *Mycolog*, #281, September 2011

Indians discover most heat-resistant fungi

A team of Indian mycologists have discovered fungi spores, considered as being able to withstand a temperature of 100-115 degrees Celsius (212-239 F). They found the heat-resistant spores in dead leaves. The specific fungi have been named 'Agni's Fungi' after the Hindu god of fire.

The spores of *Chaetomella raphigera* and *Phoma* survived two hours' incubation at 110 C (230 F) and the spores of *Bartalinia*, the more heat-resistant, survived an exposure of two hours at 115 C (239 F).

The heat resistance of fungal spores is a function of both time and temperature. Longer exposure of spores to lower temperatures was as lethal as shorter exposures to temperatures higher than 115 C (239 F).

If the spores could be grown at more than 100 C (212 F) it could be very significant since the fungi could produce products of biotechnological importance. The discovery of such heat-resistant fungi also has implications for the temperature standards followed in the food processing industry.

<http://www.hindustantimes.com/Indian-mycologists-discover-world-s-most-heat-resistant-fungi/Article1-724556.aspx>

Composting with Bokashi: Let the Fungi do the Work

by **Margaret Faye**, Editor of *Mycelium*, The Newsletter of the Mycological Society of Toronto (MST)

At an MST meeting last fall, fellow member Vera Del Vecchio spoke to me about a method of composting she is using in her downtown Toronto condo. The technique known as Bokashi has been popular in Japan since the 1980's. The technique relies on a mixture of organisms termed EM for "effective microorganisms". There are a number of different mixtures but there are two constants. *Lactobacillus* and *Saccharomyces* are present in all EM mixtures. *Lactobacillus* is the bacterium that converts milk to yoghurt. Its role in the process is to create an acidic pH that other bacteria cannot tolerate. That sets the stage for the yeast *Saccharomyces* that prefers an acid pH. *Saccharomyces* is our old fungal friend used in bread, beer and wine production. Its role here is to ferment organic waste.

The organic wastes are collected each day and added to a container with a tight fitting lid. A small amount of the EM mixture is sprinkled over top. Each layer is compacted and covered tightly to keep oxygen levels low. This part of the process is fermentation and does not require oxygen. When the container is full, it is stored for two weeks to complete the fermentation. At this point, the Bokashi is mixed with soil where the decomposition takes place. All organic matter should be fully converted to soil in 6 to 8 weeks.

What makes composting with Bokashi different? The immediate benefit is that there is no foul odor. The pickling process inhibits putrefying organisms. You can even compost meat and dairy products. When it is moved outside, Bokashi does not attract raccoons and vermin, a problem with traditional composting.

A final benefit is the quality of the compost produced. Bokashi compost is being used by both professional and amateur gardeners. There are claims of plants and vegetables growing to enormous sizes.

I thought I would give it a try. I started composting with Bokashi two weeks before Christmas. With the ground frozen, I have been mixing the Bokashi with soil in a large garbage pail and will have to wait for the warm weather to complete the decomposition. I plan to use the soil for my herb garden. I will report on my results in the fall.

Vera, in her condo, has mixed the Bokashi with soil in a covered plastic container and has completed the composting right in her kitchen. She has added the soil she created to her regular potting soil and is seeing remarkably increased growth in her house plants.

If you are interested in composting with Bokashi, contact Vera at lightupyourlife@rogers.com.

Reprinted from Mycological Society of Toronto, *Mycelium*, April-June 2011; Courtesy of New York Mycological Society Newsletter, Spring 2011

Composting with Bokashi Update

I have been composting with bokashi since last December. I continue to find that the compost pails are not bothered by raccoons that regularly attacked my green bins and I don't have the fruit flies or foul odours that were also a feature of my green bins.

I have had a few failures in my compost pail when rotting overtook the fermentation process. It could have been a combination of summer temperatures, not draining the liquid from the pails and not compressing the food waste to remove air pockets. The failed pails were not a great problem. Their contents were just buried a little early.

I used the bokashi compost in my herb garden this summer. I was impressed by the growth rate. I also found that when the plants wilted from being unwatered during hot spells, they recovered better than those planted without bokashi. For someone with a laissez faire attitude towards gardening, that was the real bonus.

Margaret Faye October, 2011

SCOTS PUPILS FIND RARE TRUFFLES GROWING IN THE SCHOOL VEGETABLE PATCH

A group of students at Moncrieff Primary School weeding out their vegetable patch have found what is thought to be the first edible white truffles growing in the UK. The truffle, which is the size of a golf ball, was initially thought to be a potato.

Previously, the children had only heard of chocolate truffles, so the school had an assembly and showed them what a truffle looked like and explained what a truffle was and how it was a kind of fungi. A teacher reported that the children still they wish they'd found chocolate truffles.

At least ten other truffles are still growing at the school, and it is hoped they will be turned into truffle oil to raise funds for a new kitchen at the school where the pupils can learn to cook what they've grown.

<http://news.stv.tv> Check for September 19, 2011

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Electronic version

Cortinarius Poisoning of the Rich and Famous

Fame and fortune can protect you from many things, but they did not protect Nicholas Evans, author of the novel [The Horse Whisperer](#), from the deadly *Cortinarius*.

In the summer of 2008, Evans picked about a pound of rusty brown mushrooms in a wooded area in Scotland and shared them with his wife and brother-in-law. All three suffered kidney damage and required dialysis. Evans has since received a kidney transplant and it is likely that his wife and brother-in-law will eventually need transplants as well. The rusty brown mushrooms turned out to be *Cortinarius speciosissimus*.

There are a number of poisonous species in the genus *Cortinarius* including two of the most deadly mushrooms - *Cortinarius speciosissimus* and *Cortinarius orellanus*. *Cortinarius speciosissimus*, commonly called the deadly webcap, contains orellanin, a potentially lethal toxin that causes kidney failure. There is no known antidote. Symptoms can be delayed for several weeks resulting in a delay in medical attention that is crucial in surviving this toxin. Kidney damage is almost inevitable.

Although the National Post reported (Aug. 3, 2011) that Evans thought the mushroom was *Boletus edulis*, it is more likely that he thought them to be chanterelles. This is the more common misidentification. The red-brown cap of *C. speciosissimus* is similar in pigment to some chanterelles. Both are fall species found in the damp wooded areas. However, the similarities end there. The cap of *C. speciosissimus* is not funnel shaped and the gills are not decurrent.

As the "corts" can be tricky to differentiate, many field guides advice against eating any members of this genus. *Cortinarius caperatus*, the Gypsy mushroom, is a notable exception. It is found and enjoyed by those whose are skilled at identifying members of this genus.

Margaret Faye Reprinted with authors edits from The Newsletter of the Mycological Society of Toronto, *Mycelium*, Vol 37,#4, October 2011



Cortinarius rubellus

Photo by Dave Malloch taken last month (September 2011) near Hopewell Rocks in southeastern New Brunswick.

Mushroom of the Issue

Sponge Bob SquarePants Mushroom

A newly discovered mushroom species "lives in the rain forest, under a tree," and researchers say it's nearly as strange as its SpongeBob SquarePants namesake.

Shaped like a sea sponge, the bright orange (and sometimes purple) mushroom, *Spongiforma squarepantsii*, was discovered in the forests of Sarawak, Malaysia, on the island of Borneo in 2010, and just described in May in the journal *Mycologia*.

The fungus has a particular odor, smelling "vaguely fruity or strongly musty," according to Dennis Desjardin of San Francisco State University.



Photo by: Tom Bruns, U.C. Berkeley